

What is claimed is:

1. A lead electrode assembly for subcutaneous  
implantation comprising:

an electrode; and

5 a pocket coupled to the electrode for positioning the  
lead electrode assembly.

2. The lead electrode assembly of claim 1, wherein the  
pocket comprises a bounded region coupled to the electrode.

3. The lead electrode assembly of claim 2, wherein the  
bounded region is contiguous.

4. The lead electrode assembly of claim 2, wherein the  
15 bounded region has a curved shape.

5. The lead electrode assembly of claim 2, wherein the  
pocket further comprises a center and wherein the bounded region  
is disposed around the center without entirely enclosing the  
20 center.

5           6.    The lead electrode assembly of claim 2, wherein the  
bounded region forms part of a circumference of a circle.

          7.    The lead electrode assembly of claim 1, wherein the  
pocket comprises a polymeric material.

10           8.    The lead electrode assembly of claim 7, wherein the  
polymeric material is selected from the group consisting  
essentially of a polyurethane, a polyamide, a  
polyetheretherketone (PEEK), a polyether block amide (PEBA), a  
polytetrafluoroethylene (PTFE), a silicone, and mixtures  
thereof.

          9.    The lead electrode assembly of claim 1, wherein the  
pocket is substantially planar.

          10.   The lead electrode assembly of claim 1, wherein the  
pocket is substantially parallel to the electrode.

          11.   The lead electrode assembly of claim 1, wherein the  
25 lead electrode assembly further comprises a rigid backing layer  
coupled between the pocket and the electrode.

5           12. The lead electrode assembly of claim 1, wherein the  
lead electrode assembly further comprises an appendage  
positioned between the pocket and the electrode.

13. The lead electrode assembly of claim 12, wherein the  
10 appendage is fin-shaped.

14. The lead electrode assembly of claim 12, wherein the  
appendage is loop-shaped.

15. The lead electrode assembly of claim 12, wherein the  
appendage is tube-shaped.

16. The lead electrode assembly of claim 1, wherein the  
pocket comprises a periphery and a middle portion surrounded by  
20 the periphery.

17. The lead electrode assembly of claim 16, wherein the  
bounded region of the pocket comprises a portion of the  
periphery.

18. The lead electrode assembly of claim 16, wherein the  
electrode is positioned substantially under the pocket.

5           19. The lead electrode assembly of claim 18, wherein the  
electrode comprises at least one edge and wherein the at least  
one edge of the electrode is positioned substantially under a  
portion of the periphery of the pocket.

10           20. The lead electrode assembly of claim 1, wherein the  
lead electrode assembly further comprises a molded cover coupled  
between the pocket and the electrode.

20 21. The lead electrode assembly of claim 18, wherein the  
electrode comprises at least one edge and wherein at least a  
portion of the bounded region of the pocket is positioned  
substantially over the at least one edge of the electrode.

20 22. The lead electrode assembly of claim 1, wherein a  
first side and a second side of the pocket are substantially  
straight.

25 23. The lead electrode assembly of claim 22, wherein the  
pocket is substantially rectangular in shape.

24. The lead electrode assembly of claim 1, wherein the  
pocket is substantially rectangular in shape.

5           25. The lead electrode assembly of claim 1, wherein a  
first side and a second side of the pocket are substantially  
curved in shape.

          26. The lead electrode assembly of claim 25, wherein the  
10 pocket is substantially triangular in shape.

          27. The lead electrode assembly of claim 1, wherein the  
pocket is substantially triangular in shape.

5           28. The lead electrode assembly of claim 2, wherein the  
bounded region of the pocket is attached directly to the  
electrode.

20           29. The lead electrode assembly of claim 2, wherein the  
lead electrode assembly further comprises a molded cover coupled  
to the electrode.

          30. The lead electrode assembly of claim 29, wherein the  
molded cover is coupled to the bounded region of the pocket.

25           31. The lead electrode assembly of claim 29, wherein the  
molded cover partially covers the electrode

5           32. The lead electrode assembly of claim 31, wherein the  
molded cover comprises a skirt that partially covers a bottom  
surface of the electrode.

          33. The lead electrode assembly of claim 29, wherein the  
10 pocket comprises at least a portion of the molded cover.

          34. The lead electrode assembly of claim 29, wherein the  
molded cover comprises a polymeric material.

          35. The lead electrode assembly of claim 34, wherein the  
polymeric material is selected from the group consisting  
essentially of a polyurethane, a polyamide, a  
polyetheretherketone (PEEK), a polyether block amide (PEBA), a  
polytetrafluoroethylene (PTFE), a silicone, and mixtures  
20 thereof.

          36. The lead electrode assembly of claim 1, wherein the  
electrode comprises a mesh of metallic material.

25           37. The lead electrode assembly of claim 36, wherein the  
metallic material is selected from the group consisting  
essentially of titanium, nickel alloys, stainless steel alloys,  
platinum, platinum iridium, and mixtures thereof.

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38. The lead electrode assembly of claim 1, wherein the electrode comprises a substantially flat sheet of metallic material.

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39. The lead electrode assembly of claim 38, wherein the metallic material is selected from the group consisting essentially of titanium, nickel alloys, stainless steel alloys, platinum, platinum iridium, and mixtures thereof.

40. The lead electrode assembly of claim 1, wherein the electrode is substantially planar.

41. The lead electrode assembly of claim 1, wherein the electrode comprises at least one substantially planar surface.

42. The lead electrode assembly of claim 41, wherein the at least one substantially planar surface has a surface area between approximately 100 square millimeters and approximately 2000 square millimeters.

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43. The lead electrode assembly of claim 1, wherein the electrode is thumbnail shaped.

5           44. The lead electrode assembly of claim 1, wherein the  
lead electrode assembly further comprises a lead coupled to the  
electrode.

          45. The lead electrode assembly of claim 44, wherein the  
10 lead comprises one or more electrical conductors electrically  
coupled to the electrode.

          46. The lead electrode assembly of claim 45, wherein the  
lead further comprises an electrically insulating sheath  
enclosing the one or more electrical conductors.

          47. The lead electrode assembly of claim 44, wherein the  
lead electrode assembly further comprises a connector coupled to  
the lead.

          48. The lead electrode assembly of claim 47, wherein the  
connector is electrically coupled to the electrode.

          49. The lead electrode assembly of claim 44, wherein the  
25 lead is between approximately 5 cm and approximately 52 cm in  
length.

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5           50. The lead electrode assembly of claim 49, wherein the  
lead is between approximately 5 cm and approximately 30 cm in  
length.

10           51. The lead electrode assembly of claim 50, wherein the  
lead is between approximately 10 cm and approximately 20 cm in  
length.

52. The lead electrode assembly of claim 49, wherein the  
lead length is one of a plurality of pre-set lengths.

53. The lead electrode assembly of claim 52, wherein the  
pre-set lengths vary by approximately 10 cm.

54. The lead electrode assembly of claim 44, wherein the  
lead has a proximal end and a distal end and wherein the  
proximal end of the lead is coupled to the electrode.

25           55. The lead electrode assembly of claim 54, wherein the  
lead electrode assembly further comprises a lead fastener  
coupled between the lead and the electrode.

5           56. The lead electrode assembly of claim 1, wherein the  
length of the electrode is not equal to the length of the  
pocket.

10           57. The lead electrode assembly of claim 56, wherein the  
length of the electrode is less than the length of the pocket.

58. The lead electrode assembly of claim 1, wherein the  
length of the electrode is equal to the length of the pocket.

59. A lead electrode assembly for use with an implantable  
cardioverter-defibrillator subcutaneously implanted outside the  
ribcage between the third and twelfth ribs comprising:

an electrode; and

a pocket coupled to the electrode for positioning the  
lead electrode assembly.

60. The lead electrode assembly of claim 59, wherein the  
pocket comprises a bounded region coupled to the electrode.

25           61. The lead electrode assembly of claim 60, wherein the  
bounded region is contiguous.

5           62. The lead electrode assembly of claim 60, wherein the  
bounded region has a curved shape.

63. The lead electrode assembly of claim 60, wherein the  
pocket further comprises a center and wherein the bounded region  
10 is disposed around the center without entirely enclosing the  
center.

64. The lead electrode assembly of claim 60, wherein the  
bounded region forms part of a circumference of a circle.

65. The lead electrode assembly of claim 59, wherein the  
pocket comprises a polymeric material.

66. The lead electrode assembly of claim 65, wherein the  
polymeric material is selected from the group consisting  
essentially of a polyurethane, a polyamide, a  
polyetheretherketone (PEEK), a polyether block amide (PEBA), a  
polytetrafluoroethylene (PTFE), a silicone, and mixtures  
thereof.

25           67. The lead electrode assembly of claim 59, wherein the  
pocket is substantially planar.

5           68. The lead electrode assembly of claim 59, wherein the  
pocket is substantially parallel to the electrode.

69. The lead electrode assembly of claim 59, wherein the  
lead electrode assembly further comprises a rigid backing layer  
10 coupled between the pocket and the electrode.

70. The lead electrode assembly of claim 59, wherein the  
lead electrode assembly further comprises an appendage  
positioned between the pocket and the electrode.

71. The lead electrode assembly of claim 70, wherein the  
appendage is fin-shaped.

72. The lead electrode assembly of claim 70, wherein the  
20 appendage is loop-shaped.

73. The lead electrode assembly of claim 70, wherein the  
appendage is tube-shaped.

25           74. The lead electrode assembly of claim 59, wherein the  
pocket comprises a periphery and a middle portion surrounded by  
the periphery.

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5           75. The lead electrode assembly of claim 74, wherein the  
bounded region of the pocket comprises a portion of the  
periphery.

10           76. The lead electrode assembly of claim 74, wherein the  
electrode is positioned substantially under the pocket.

77. The lead electrode assembly of claim 76, wherein the  
electrode comprises at least one edge and wherein the at least  
one edge of the electrode is positioned substantially under a  
portion of the periphery of the pocket.

78. The lead electrode assembly of claim 59, wherein the  
lead electrode assembly further comprises a molded cover coupled  
between the pocket and the electrode.

79. The lead electrode assembly of claim 76, wherein the  
electrode comprises at least one edge and wherein at least a  
portion of the bounded region of the pocket is positioned  
substantially over the at least one edge of the electrode.

80. The lead electrode assembly of claim 59, wherein a  
first side and a second side of the pocket are substantially  
straight.

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81. The lead electrode assembly of claim 80, wherein the pocket is substantially rectangular in shape.

82. The lead electrode assembly of claim 59, wherein the  
10 pocket is substantially rectangular in shape.

83. The lead electrode assembly of claim 59, wherein a first side and a second side of the pocket are substantially curved in shape.

84. The lead electrode assembly of claim 83, wherein the pocket is substantially triangular in shape.

85. The lead electrode assembly of claim 59, wherein the  
20 pocket is substantially triangular in shape.

86. The lead electrode assembly of claim 60, wherein the bounded region of the pocket is attached directly to the electrode.

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87. The lead electrode assembly of claim 60, wherein the lead electrode assembly further comprises a molded cover coupled to the electrode.

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88. The lead electrode assembly of claim 87, wherein the molded cover is coupled to the bounded region of the pocket.

89. The lead electrode assembly of claim 87, wherein the  
10 molded cover partially covers the electrode

90. The lead electrode assembly of claim 89, wherein the molded cover comprises a skirt that partially covers a bottom surface of the electrode.

91. The lead electrode assembly of claim 87, wherein the pocket comprises at least a portion of the molded cover.

92. The lead electrode assembly of claim 87, wherein the  
20 molded cover comprises a polymeric material.

93. The lead electrode assembly of claim 92, wherein the polymeric material is selected from the group consisting essentially of a polyurethane, a polyamide, a  
25 polyetheretherketone (PEEK), a polyether block amide (PEBA), a polytetrafluoroethylene (PTFE), a silicone, and mixtures thereof.

5           94. The lead electrode assembly of claim 59, wherein the  
electrode comprises a mesh of metallic material.

          95. The lead electrode assembly of claim 94, wherein the  
metallic material is selected from the group consisting  
10 essentially of titanium, nickel alloys, stainless steel alloys,  
platinum, platinum iridium, and mixtures thereof.

          96. The lead electrode assembly of claim 59, wherein the  
electrode comprises a substantially flat sheet of metallic  
material.

          97. The lead electrode assembly of claim 96, wherein the  
metallic material is selected from the group consisting  
essentially of titanium, nickel alloys, stainless steel alloys,  
20 platinum, platinum iridium, and mixtures thereof.

          98. The lead electrode assembly of claim 59, wherein the  
electrode is substantially planar.

25           99. The lead electrode assembly of claim 59, wherein the  
electrode comprises at least one substantially planar surface.



5           100. The lead electrode assembly of claim 99, wherein the  
at least one substantially planar surface has a surface area  
between approximately 100 square millimeters and approximately  
2000 square millimeters.

10           101. The lead electrode assembly of claim 59, wherein the  
electrode is thumbnail shaped.

102. The lead electrode assembly of claim 59, wherein the  
lead electrode assembly further comprises a lead coupled to the  
electrode.

103. The lead electrode assembly of claim 102, wherein the  
lead comprises one or more electrical conductors electrically  
coupled to the electrode.

104. The lead electrode assembly of claim 103, wherein the  
lead further comprises an electrically insulating sheath  
enclosing the one or more electrical conductors.

25           105. The lead electrode assembly of claim 102, wherein the  
lead electrode assembly further comprises a connector coupled to  
the lead.

5           106. The lead electrode assembly of claim 105, wherein the  
connector is electrically coupled to the electrode.

107. The lead electrode assembly of claim 102, wherein the  
lead is between approximately 5 cm and approximately 52 cm in  
10 length.

108. The lead electrode assembly of claim 107, wherein the  
lead is between approximately 5 cm and approximately 30 cm in  
length.

109. The lead electrode assembly of claim 108, wherein the  
lead is between approximately 10 cm and approximately 20 cm in  
length.

20           110. The lead electrode assembly of claim 107, wherein the  
lead length is one of a plurality of pre-set lengths.

111. The lead electrode assembly of claim 110, wherein the  
pre-set lengths vary by approximately 10 cm.

25           112. The lead electrode assembly of claim 102, wherein the  
lead has a proximal end and a distal end and wherein the  
proximal end of the lead is coupled to the electrode.

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113. The lead electrode assembly of claim 112, wherein the lead electrode assembly further comprises a lead fastener coupled between the lead and the electrode.

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114. The lead electrode assembly of claim 59, wherein the length of the electrode is not equal to the length of the pocket.

115. The lead electrode assembly of claim 114, wherein the length of the electrode is less than the length of the pocket.

116. The lead electrode assembly of claim 59, wherein the length of the electrode is equal to the length of the pocket.

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117. A lead electrode assembly for subcutaneous implantation in a patient's posterior thorax from an incision in the skin covering the patient's anterior thorax comprising:

an electrode; and

a pocket coupled to the electrode for positioning the

25

lead electrode assembly.

118. The lead electrode assembly of claim 117, wherein the pocket comprises a bounded region coupled to the electrode.

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119. The lead electrode assembly of claim 118, wherein the bounded region is contiguous.

120. The lead electrode assembly of claim 118, wherein the  
10 bounded region has a curved shape.

121. The lead electrode assembly of claim 118, wherein the pocket further comprises a center and wherein the bounded region is disposed around the center without entirely enclosing the center.

122. The lead electrode assembly of claim 118, wherein the bounded region forms part of a circumference of a circle.

123. The lead electrode assembly of claim 117, wherein the pocket comprises a polymeric material.

124. The lead electrode assembly of claim 123, wherein the polymeric material is selected from the group consisting  
25 essentially of a polyurethane, a polyamide, a polyetheretherketone (PEEK), a polyether block amide (PEBA), a polytetrafluoroethylene (PTFE), a silicone, and mixtures thereof.

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125. The lead electrode assembly of claim 117, wherein the pocket is substantially planar.

126. The lead electrode assembly of claim 117, wherein the  
10 pocket is substantially parallel to the electrode.

127. The lead electrode assembly of claim 117, wherein the lead electrode assembly further comprises a rigid backing layer coupled between the pocket and the electrode.

128. The lead electrode assembly of claim 117, wherein the lead electrode assembly further comprises an appendage positioned between the pocket and the electrode.

129. The lead electrode assembly of claim 128, wherein the appendage is fin-shaped.

130. The lead electrode assembly of claim 128, wherein the appendage is loop-shaped.

131. The lead electrode assembly of claim 128, wherein the appendage is tube-shaped.

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137. The lead electrode assembly of claim 134, wherein the electrode comprises at least one edge and wherein at least a portion of the bounded region of the pocket is positioned substantially over the at least one edge of the electrode.

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138. The lead electrode assembly of claim 117, wherein a first side and a second side of the pocket are substantially straight.

10 139. The lead electrode assembly of claim 138, wherein the pocket is substantially rectangular in shape.

140. The lead electrode assembly of claim 117, wherein the pocket is substantially rectangular in shape.

141. The lead electrode assembly of claim 117, wherein a first side and a second side of the pocket are substantially curved in shape.

20 142. The lead electrode assembly of claim 141, wherein the pocket is substantially triangular in shape.

143. The lead electrode assembly of claim 117, wherein the pocket is substantially triangular in shape.

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144. The lead electrode assembly of claim 118, wherein the bounded region of the pocket is attached directly to the electrode.

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145. The lead electrode assembly of claim 118, wherein the lead electrode assembly further comprises a molded cover coupled to the electrode.

10 146. The lead electrode assembly of claim 145, wherein the molded cover is coupled to the bounded region of the pocket.

147. The lead electrode assembly of claim 145, wherein the molded cover partially covers the electrode

148. The lead electrode assembly of claim 147, wherein the molded cover comprises a skirt that partially covers a bottom surface of the electrode.

20 149. The lead electrode assembly of claim 145, wherein the pocket comprises at least a portion of the molded cover.

150. The lead electrode assembly of claim 145, wherein the molded cover comprises a polymeric material.

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151. The lead electrode assembly of claim 150, wherein the polymeric material is selected from the group consisting essentially of a polyurethane, a polyamide, a



5 polyetheretherketone (PEEK), a polyether block amide (PEBA), a  
polytetrafluoroethylene (PTFE), a silicone, and mixtures  
thereof.

152. The lead electrode assembly of claim 117, wherein the  
10 electrode comprises a mesh of metallic material.

153. The lead electrode assembly of claim 152, wherein the  
metallic material is selected from the group consisting  
essentially of titanium, nickel alloys, stainless steel alloys,  
platinum, platinum iridium, and mixtures thereof.

154. The lead electrode assembly of claim 117, wherein the  
electrode comprises a substantially flat sheet of metallic  
material.

155. The lead electrode assembly of claim 154, wherein the  
metallic material is selected from the group consisting  
essentially of titanium, nickel alloys, stainless steel alloys,  
platinum, platinum iridium, and mixtures thereof.

156. The lead electrode assembly of claim 117, wherein the  
electrode is substantially planar.

5           157. The lead electrode assembly of claim 117, wherein the  
electrode comprises at least one substantially planar surface.

158. The lead electrode assembly of claim 157, wherein the  
at least one substantially planar surface has a surface area  
10 between approximately 100 square millimeters and approximately  
2000 square millimeters.

159. The lead electrode assembly of claim 117, wherein the  
electrode is thumbnail shaped.

160. The lead electrode assembly of claim 117, wherein the  
lead electrode assembly further comprises a lead coupled to the  
electrode.

20           161. The lead electrode assembly of claim 160, wherein the  
lead comprises one or more electrical conductors electrically  
coupled to the electrode.

25           162. The lead electrode assembly of claim 161, wherein the  
lead further comprises an electrically insulating sheath  
enclosing the one or more electrical conductors.

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170. The lead electrode assembly of claim 160, wherein the lead has a proximal end and a distal end and wherein the proximal end of the lead is coupled to the electrode.

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171. The lead electrode assembly of claim 170, wherein the lead electrode assembly further comprises a lead fastener coupled between the lead and the electrode.

172. The lead electrode assembly of claim 117, wherein the length of the electrode is not equal to the length of the pocket.

173. The lead electrode assembly of claim 172, wherein the length of the electrode is less than the length of the pocket.

174. The lead electrode assembly of claim 117, wherein the length of the electrode is equal to the length of the pocket.

175. An implantable cardioverter-defibrillator for  
25 subcutaneous positioning between the third rib and the twelfth rib within a patient, the implantable cardioverter-defibrillator comprising:

a housing; and

5 a lead electrode assembly coupled to the housing,  
wherein the lead electrode assembly comprises:  
an electrode; and  
a pocket coupled to the electrode for positioning the  
lead electrode assembly.

10  
176. The implantable cardioverter-defibrillator of claim  
175, wherein the pocket comprises a bounded region coupled to  
the electrode.

177. The implantable cardioverter-defibrillator of claim  
176, wherein the bounded region is contiguous.

178. The implantable cardioverter-defibrillator of claim  
176, wherein the bounded region has a curved shape.

179. The implantable cardioverter-defibrillator of claim  
176, wherein the pocket further comprises a center and wherein  
the bounded region is disposed around the center without  
entirely enclosing the center.

25  
180. The implantable cardioverter-defibrillator of claim  
176, wherein the bounded region forms part of a circumference of  
a circle.

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181. The implantable cardioverter-defibrillator of claim 175, wherein the pocket comprises a polymeric material.

182. The implantable cardioverter-defibrillator of claim 10 181, wherein the polymeric material is selected from the group consisting essentially of a polyurethane, a polyamide, a polyetheretherketone (PEEK), a polyether block amide (PEBA), a polytetrafluoroethylene (PTFE), a silicone, and mixtures thereof.

183. The implantable cardioverter-defibrillator of claim 175, wherein the pocket is substantially planar.

184. The implantable cardioverter-defibrillator of claim 20 175, wherein the pocket is substantially parallel to the electrode.

185. The implantable cardioverter-defibrillator of claim 25 175, wherein the lead electrode assembly further comprises a rigid backing layer coupled between the pocket and the electrode.

5        186. The implantable cardioverter-defibrillator of claim  
175, wherein the lead electrode assembly further comprises an  
appendage positioned between the pocket and the electrode.

187. The implantable cardioverter-defibrillator of claim  
10 186, wherein the appendage is fin-shaped.

188. The implantable cardioverter-defibrillator of claim  
186, wherein the appendage is loop-shaped.

189. The implantable cardioverter-defibrillator of claim  
186, wherein the appendage is tube-shaped.

190. The implantable cardioverter-defibrillator of claim  
175, wherein the pocket comprises a periphery and a middle  
20 portion surrounded by the periphery.

191. The implantable cardioverter-defibrillator of claim  
190, wherein the bounded region of the pocket comprises a  
portion of the periphery.

25 192. The implantable cardioverter-defibrillator of claim  
190, wherein the electrode is positioned substantially under the  
pocket.

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193. The implantable cardioverter-defibrillator of claim 192, wherein the electrode comprises at least one edge and wherein the at least one edge of the electrode is positioned substantially under a portion of the periphery of the pocket.

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194. The implantable cardioverter-defibrillator of claim 175, wherein the lead electrode assembly further comprises a molded cover coupled between the pocket and the electrode.

195. The implantable cardioverter-defibrillator of claim 192, wherein the electrode comprises at least one edge and wherein at least a portion of the bounded region of the pocket is positioned substantially over the at least one edge of the electrode.

196. The implantable cardioverter-defibrillator of claim 175, wherein a first side and a second side of the pocket are substantially straight.

25 197. The implantable cardioverter-defibrillator of claim 196, wherein the pocket is substantially rectangular in shape.



5           198. The implantable cardioverter-defibrillator of claim  
175, wherein the pocket is substantially rectangular in shape.

199. The implantable cardioverter-defibrillator of claim  
175, wherein a first side and a second side of the pocket are  
10 substantially curved in shape.

200. The implantable cardioverter-defibrillator of claim  
199, wherein the pocket is substantially triangular in shape.

201. The implantable cardioverter-defibrillator of claim  
175, wherein the pocket is substantially triangular in shape.

202. The implantable cardioverter-defibrillator of claim  
176, wherein the bounded region of the pocket is attached  
20 directly to the electrode.

203. The implantable cardioverter-defibrillator of claim  
176, wherein the lead electrode assembly further comprises a  
molded cover coupled to the electrode.

25           204. The implantable cardioverter-defibrillator of claim  
203, wherein the molded cover is coupled to the bounded region  
of the pocket.

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205. The implantable cardioverter-defibrillator of claim  
203, wherein the molded cover partially covers the electrode

206. The implantable cardioverter-defibrillator of claim  
10 205, wherein the molded cover comprises a skirt that partially  
covers a bottom surface of the electrode.

207. The implantable cardioverter-defibrillator of claim  
203, wherein the pocket comprises at least a portion of the  
molded cover.

208. The implantable cardioverter-defibrillator of claim  
203, wherein the molded cover comprises a polymeric material.

209. The implantable cardioverter-defibrillator of claim  
208, wherein the polymeric material is selected from the group  
consisting essentially of a polyurethane, a polyamide, a  
polyetheretherketone (PEEK), a polyether block amide (PEBA), a  
polytetrafluoroethylene (PTFE), a silicone, and mixtures  
25 thereof.

5           210. The implantable cardioverter-defibrillator of claim  
175, wherein the electrode comprises a mesh of metallic  
material.

10           211. The implantable cardioverter-defibrillator of claim  
210, wherein the metallic material is selected from the group  
consisting essentially of titanium, nickel alloys, stainless  
steel alloys, platinum, platinum iridium, and mixtures thereof.

15           212. The implantable cardioverter-defibrillator of claim  
175, wherein the electrode comprises a substantially flat sheet  
of metallic material.

20           213. The implantable cardioverter-defibrillator of claim  
212, wherein the metallic material is selected from the group  
consisting essentially of titanium, nickel alloys, stainless  
steel alloys, platinum, platinum iridium, and mixtures thereof.

25           214. The implantable cardioverter-defibrillator of claim  
175, wherein the electrode is substantially planar.

          215. The implantable cardioverter-defibrillator of claim  
175, wherein the electrode comprises at least one substantially  
planar surface.

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216. The implantable cardioverter-defibrillator of claim 215, wherein the at least one substantially planar surface has a surface area between approximately 100 square millimeters and approximately 2000 square millimeters.

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217. The implantable cardioverter-defibrillator of claim 175, wherein the electrode is thumbnail shaped.

218. The implantable cardioverter-defibrillator of claim 175, wherein the lead electrode assembly further comprises a lead coupled between the electrode and the housing.

219. The implantable cardioverter-defibrillator of claim 218, wherein the lead comprises one or more electrical conductors electrically coupled to the electrode.

220. The implantable cardioverter-defibrillator of claim 219, wherein the lead further comprises an electrically insulating sheath enclosing the one or more electrical conductors.

5           221. The implantable cardioverter-defibrillator of claim  
218, wherein the lead electrode assembly further comprises a  
connector coupled to the lead.

          222. The implantable cardioverter-defibrillator of claim  
10 221, wherein the connector is electrically coupled to the  
electrode.

          223. The implantable cardioverter-defibrillator of claim  
218, wherein the lead is between approximately 5 cm and  
approximately 52 cm in length.

          224. The implantable cardioverter-defibrillator of claim  
223, wherein the lead is between approximately 5 cm and  
approximately 30 cm in length.

          225. The implantable cardioverter-defibrillator of claim  
224, wherein the lead is between approximately 10 cm and  
approximately 20 cm in length.

25           226. The implantable cardioverter-defibrillator of claim  
223, wherein the lead length is one of a plurality of pre-set  
lengths.

5        227. The implantable cardioverter-defibrillator of claim  
226, wherein the pre-set lengths vary by approximately 10 cm.

228. The implantable cardioverter-defibrillator of claim  
218, wherein the lead has a proximal end and a distal end and  
10 wherein the proximal end of the lead is coupled to the  
electrode.

229. The implantable cardioverter-defibrillator of claim  
228, wherein the lead electrode assembly further comprises a  
lead fastener coupled between the lead and the electrode.

230. The implantable cardioverter-defibrillator of claim  
175, wherein the length of the electrode is not equal to the  
length of the pocket.

231. The implantable cardioverter-defibrillator of claim  
230, wherein the length of the electrode is less than the length  
of the pocket.

25        232. The implantable cardioverter-defibrillator of claim  
175, wherein the length of the electrode is equal to the length  
of the pocket.

5           233. A lead electrode assembly manipulation tool  
comprising:

          a paddle; and

          a rod connected to the paddle.

10           234. The lead electrode assembly manipulation tool of claim  
223, wherein the paddle is substantially planar.

          235. The lead electrode assembly manipulation tool of claim  
233, wherein the paddle has a substantially circular shape.

          236. The lead electrode assembly manipulation tool of claim  
233, wherein the paddle has a proximal end and a distal end and  
wherein the proximal end of the paddle is attached to the rod.

20           237. The lead electrode assembly manipulation tool of claim  
233, wherein the rod has a first end and a second end and  
wherein the first end of the rod is connected to the paddle.

          238. The lead electrode assembly manipulation tool of claim  
25 237, wherein lead electrode assembly manipulation tool further  
comprises a handle connected to the second end of the rod.

5           239. The lead electrode assembly manipulation tool of claim  
233, wherein the rod is curved.

240. The lead electrode assembly manipulation tool of claim  
233, wherein the paddle comprises a metallic material.

10

241. The lead electrode assembly manipulation tool of claim  
240, wherein the metallic material is selected from the group  
consisting essentially of titanium, nickel alloys, stainless  
steel alloys, platinum, platinum iridium, and mixtures thereof.

242. The lead electrode assembly manipulation tool of claim  
233, wherein the paddle comprises a polymeric material.

243. The lead electrode assembly manipulation tool of claim  
242, wherein the polymeric material is selected from the group  
consisting essentially of a polyurethane, a polyamide, a  
polyetheretherketone (PEEK), a polyether block amide (PEBA), a  
polytetrafluoroethylene (PTFE), a silicone, and mixtures  
thereof.

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244. The lead electrode assembly manipulation tool of claim  
233, wherein the rod comprises a metallic material.



5           245. The lead electrode assembly manipulation tool of claim  
244, wherein the metallic material is selected from the group  
consisting essentially of titanium, nickel alloys, stainless  
steel alloys, platinum, platinum iridium, and mixtures thereof.

10           246. The lead electrode assembly manipulation tool of claim  
233, wherein the rod comprises a polymeric material.

247. The lead electrode assembly manipulation tool of claim  
246, wherein the polymeric material is selected from the group  
consisting essentially of a polyurethane, a polyamide, a  
polyetheretherketone (PEEK), a polyether block amide (PEBA), a  
polytetrafluoroethylene (PTFE), a silicone, and mixtures  
thereof.

20           248. A method for surgically implanting a lead electrode  
assembly subcutaneously outside a patient's ribcage, the method  
comprising the steps of:

          providing a lead electrode assembly having a lead and a  
pocket;

25           providing a lead electrode assembly manipulation tool;

          creating a subcutaneous path outside the ribcage;

          capturing the lead electrode assembly with the lead  
electrode assembly manipulation tool;

5 moving the lead electrode assembly through the path; and  
releasing the lead electrode assembly from the lead  
electrode assembly manipulation tool.

249. The method of claim 248, wherein the step of creating  
10 a subcutaneous path outside the ribcage further comprises the  
steps of:

providing a hemostat;

creating an incision in the thoracic region of the patient;

and

creating the subcutaneous path by moving the hemostat  
between the ribcage and the skin.

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250. The method of claim 249, wherein the step of creating  
the subcutaneous path by moving the hemostat between the ribcage  
and the skin further comprises the step of:

moving the hemostat laterally and posteriorly around the  
side of the patient until the subcutaneous path terminates at a  
termination point such that if a straight line were drawn from  
the incision to the termination point, the line would intersect  
25 the heart of the patient.

[illegible]

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5 holding the lead of the lead electrode assembly still  
relative to the rod of the lead electrode assembly manipulation  
tool.

256. The method of claim 253, wherein the step of capturing  
10 the lead electrode assembly with the lead electrode assembly  
manipulation tool further comprises the step of:

holding the lead of the lead electrode assembly against the  
rod of the lead electrode assembly manipulation tool.

257. The method of claim 253, wherein the step of releasing  
the lead electrode assembly from the lead electrode assembly  
manipulation tool further comprises the step of:

allowing the lead of the lead electrode assembly to move  
relative to the rod of the lead electrode assembly manipulation  
20 tool.

258. A subcutaneous implantable cardioverter-defibrillator  
kit for use in surgically implanting a subcutaneous implantable  
cardioverter-defibrillator and a lead electrode assembly within  
25 a patient comprising:

a tray; and

a lead electrode assembly having a pocket stored in the  
tray.

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259. The subcutaneous implantable cardioverter-defibrillator kit of claim 258, wherein the subcutaneous implantable cardioverter-defibrillator kit further comprises a lead electrode assembly manipulation tool having a paddle,  
10 wherein the lead electrode assembly manipulation tool is stored in the tray.

260. The subcutaneous implantable cardioverter-defibrillator kit of claim 258, wherein the subcutaneous implantable cardioverter-defibrillator kit further comprises a subcutaneous implantable cardioverter-defibrillator, wherein the subcutaneous implantable cardioverter-defibrillator is stored in the tray.

261. The subcutaneous implantable cardioverter-defibrillator kit of claim 258, wherein the subcutaneous implantable cardioverter-defibrillator kit further comprises a medical adhesive, wherein the medical adhesive is stored in the tray.

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262. The subcutaneous implantable cardioverter-defibrillator kit of claim 258, wherein the subcutaneous

5 implantable cardioverter-defibrillator kit further comprises an  
anesthetic, wherein the anesthetic is stored in the tray.

263. The subcutaneous implantable cardioverter-  
defibrillator kit of claim 258, wherein the subcutaneous  
10 implantable cardioverter-defibrillator kit further comprises a  
tube of mineral oil, wherein the tube of mineral oil is stored  
in the tray.

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